

Farms could slash pesticide use without losses, research reveals

[Damian Carrington](#) Thu 6 Apr 2017 11.04 EDT

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Study shows almost all farms could significantly cut chemical use while producing as much food, in a major challenge to the billion-dollar pesticide industry



Many farmers want to reduce pesticide use but do not have good access to information on alternatives, scientists say. Photograph: Remy Gabalda/AFP/Getty Images

Virtually all farms could significantly cut their pesticide use while still producing as much food, according to a major new study. The research also shows chemical treatments could be cut without affecting farm profits on over three-quarters of farms.

The scientists said that many farmers wanted to reduce pesticide use, partly due to concerns for their own health. But farmers do not have good access to

information on alternatives, the researchers said, because much of their advice comes from representatives of companies that sell both seeds and pesticides.

The work presents a serious challenge to the billion-dollar pesticide industry, which has long argued its products are vital to food production, especially with the world population set to grow to nine billion people by 2050.

However, this was [dismissed as a "myth"](#) in March by UN food and pollution experts, who said pesticides cause "catastrophic impacts on the environment and human health" and accused pesticide manufacturers of a "systematic denial of harms". In a further blow, the Guardian revealed in March that [Europe is poised to ban the world's most widely used insecticides](#) from all fields.

The new research, [published in the peer-reviewed journal Nature Plants](#), analysed the pesticide use, productivity and profitability of almost 1,000 farms of all types across France. By comparing similar farms using high or low levels of pesticides, the scientists found that 94% of farms would lose no production if they cut pesticides and two-fifths of these would actually produce more.

The results were most startling for insecticides: lower levels would result in more production in 86% of farms and no farms at all would lose production.

The research also indicated that 78% of farms would be equally or more profitable when using less pesticide of all types.

"It is striking," said Nicolas Munier-Jolain, at France's National Institute for Agricultural Research, and one of the team who conducted the new study. He said the results show that pesticide reduction is possible today for most arable farmers, without losing money: "Our results are quite consistent with the UN [myth] report."

"But [the research] does not mean pesticides are useless or inefficient," he

said. The farmers using low levels of chemicals employ other methods to control pests, he said, such as rotating crops, mechanical weeding, using resistant varieties and carefully managing sowing dates and fertiliser use. "It's a big change, but not a revolution," he said.

"If you want real reduction in pesticide use, give the farmers the information about how to replace them," said Munier-Jolain. "This is absolutely not the case at the moment. A large proportion of advice is provided by organisations that are both selling the pesticides and collecting the crops. I am not sure the main concern of these organisations is to reduce the amount of pesticide used."

Prof Dave Goulson, at the University of Sussex, UK, said: "While we have a system where farmers are advised by agronomists, most of whom work on commission for agrochemical companies, then inevitably pesticides will be massively overused. Even the few independent agronomists struggle to get independent information and advice to pass on to farmers."

"Despite [evidence](#) that much pesticide use is unnecessary and a big European Union initiative to encourage sustainable use, farming continues to be dominated by pesticide use," said Matt Shardlow, chief executive of Buglife.

France's deadline for a 50% cut in pesticide use was meant to be 2018 but has been postponed to 2025, with use actually rising not falling. The UK's [action plan for the sustainable use of pesticides](#) contains no targets or timetable. "Financial advisors and doctors cannot profit from their advice to individuals and it is time that this market failure was corrected for pesticide sales as well," Shardlow said.

Graeme Taylor, a spokesman for the [European Crop Protection Association](#) (ECPA) which represents pesticide manufacturers, said: "Characterising it as an argument between using more or less is unhelpful as it ignores the reality

that any genuine commitment to sustainable agriculture means giving farmers access to a variety of tools. Pesticides are not a panacea, but are one of the most important tools available to the farmer to fight pests and diseases.”

He said a recent consultancy [report commissioned by the ECPA](#) indicated that French farmers would lose €2bn of grape production without access to certain pesticides.

The new research showed that the type of farms most sensitive to cuts in pesticide use are potato and sugar beet farms, because they use high levels of pesticides and are highly profitable. But it showed that most arable farms could cut pesticides by over 40% without losses. The researchers wrote: “The reduction of pesticide use is one of the critical drivers to preserve the environment and human health.”

“Farmers are doing their best to use fewer pesticides,” said Munier-Jolain. “Many are motivated because they are thinking about their own health.” He said that there was a perception among farmers that cutting pesticide use increases the risk of poor harvests, but that those diversifying their crops actually decreased such risks: “They sleep better than the other farmers.”

- This article was amended on 10 April 2017 to clarify that lower levels of insecticides would result in more production in 86% of farms and no farms at all would lose production.

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